

CLAIMS:

1. A carbonization apparatus for producing activated carbon by subjecting an organic waste material to be treated such as raw garbage, wood debris, meat-and-bone meal, waste clothes and plastic wastage to carbonization treatment including heating, drying, dry distillation and activation processes using steam, which apparatus comprises:

a drying carbonization furnace for drying and carbonizing said waste material with overheated steam introduced thereto and discharging spent steam which is no longer required,

a high-temperature steam generator for generating, from the steam introduced therein, the overheated steam to be fed to said drying carbonization furnace,

a deodorizing furnace for deodorizing impurities contained in the spent steam discharged from said drying carbonization furnace by heating the steam and discharging the steam reaching a high temperature, and

a waste heat boiler for generating steam from water heated with the high-temperature steam discharged from said deodorizing furnace.

2. A carbonization apparatus for producing activated carbon by subjecting an organic waste material to be treated such as raw garbage, wood debris, meat-and-bone meal, waste clothes and plastic wastage to carbonization treatment including heating, drying, dry distillation and activation processes using steam, which apparatus comprises:

a carbonization furnace for carbonizing waste material to be treated with overheated steam introduced thereto and discharging spent steam which is no longer required,

a drying furnace for drying the waste material with the steam introduced from said carbonization furnace and discharging the spent steam,

a high-temperature steam generator for generating, from the steam introduced therein, the overheated steam to be fed to said carbonization furnace,

a deodorizing furnace for deodorizing impurities contained in the spent steam discharged from said drying furnace by heating the steam and discharging the steam reaching a high temperature, and

a waste heat boiler for generating steam from water heated with the high-temperature steam discharged from said deodorizing furnace.

3. A carbonization apparatus for producing activated carbon by subjecting an organic waste material to be treated such as raw garbage, wood debris, meat-and-bone meal, waste clothes and plastic wastage to carbonization treatment including heating, drying, dry distillation and activation processes using steam, which apparatus comprises:

a carbonization accelerating furnace for accelerating carbonization of waste material to be treated with overheated steam introduced thereinto and discharging spent steam which is no longer required,

a carbonization furnace for carbonizing the waste material with overheated steam discharged from said carbonization accelerating furnace and introduced thereinto and discharging the spent steam,

a drying furnace for drying the waste material with the steam introduced from said carbonization furnace and discharging the spent steam,

a high-temperature steam generator for generating, from the steam introduced therein, the overheated steam to be fed to said carbonization furnace,

a deodorizing furnace for deodorizing impurities contained in the spent steam discharged from said drying furnace by heating the steam and discharging the steam reaching a high temperature, and

a waste heat boiler for generating steam from water heated with the high-temperature steam discharged from said deodorizing furnace.

4. The carbonization apparatus for producing activated carbon set forth in any of claims 1 to 3, wherein said drying furnace, carbonization furnace, drying carbonization furnace or carbonization accelerating furnace is provided with a cylinder shell having a waste intake port for introducing waste material to be treated, a cylinder part for stirring and moving the waste material, an exhaust port for discharging the waste material, and a steam inlet port for introducing overheated steam or spent steam tangentially from the outside of said cylinder part to the inside of said cylinder part, and rotatable stirring blades for stirring and moving the waste material in said cylinder shell.

5. The carbonization apparatus for producing activated carbon set forth in claim 4, wherein said steam inlet port is formed to introduce the overheated steam or spent steam in the same direction tangent to the inner surface of said cylinder as the rotation direction of said stirring blades.
6. The carbonization apparatus for producing activated carbon set forth in claim 5, wherein said cylinder shell is provided with a plurality of steam inlet ports.
7. The carbonization apparatus for producing activated carbon set forth in claim 4, wherein said cylinder shell is provided with a steam discharge port from which the spent steam after heating the waste material in said cylinder shell is discharged in the direction tangent to the inner surface of said cylinder part from the inside of said cylinder part to the outside of said cylinder part.
8. The carbonization apparatus for producing activated carbon set forth in claim 5, wherein said cylinder shell is provided with a steam discharge port from which the spent steam after heating the waste material in said cylinder shell is discharged in the direction tangent to the inner surface of said cylinder part from the inside of said cylinder part to the outside of said cylinder part.
9. The carbonization apparatus for producing activated carbon set forth in claim 6, wherein said cylinder shell is provided with a steam discharge port from which the spent steam after heating the waste material in said cylinder shell is discharged in the direction tangent to the inner surface of said cylinder part from the inside of said cylinder part to the outside of said cylinder part.
10. The carbonization apparatus for producing activated carbon set forth in any of claims 1 to 3, further comprising a pressure regulation means or restriction means for adjusting the overheated steam or spent steam to be fed to said drying carbonization furnace or carbonization accelerating furnace to 5 to 20(m/s).

11. The carbonization apparatus for producing activated carbon set forth in claim 4, further comprising a pressure regulation means or restriction means for adjusting the overheated steam or spent steam to be fed to said drying carbonization furnace or carbonization accelerating furnace to 5 to 20(m/s).

12. The carbonization apparatus for producing activated carbon set forth in any of claims 5 to 9, further comprising a pressure regulation means or restriction means for adjusting the overheated steam or spent steam to be fed to said drying carbonization furnace or carbonization accelerating furnace to 5 to 20(m/s).